Claims

1. A fuel injection nozzle for DME fuel, which is mounted in each combustion chamber of a light oil fuel diesel engine and is for driving the light oil fuel diesel engine by using DME fuel, comprising:

a nozzle body having a fuel injection hole with a total injection hole area to attain an injection amount of the DME fuel which enables an engine output comparable to light oil fuel to be obtained; and a needle valve provided to be capable of reciprocating to the fuel injection hole, characterized in that

the needle valve is lifted from a state where a tip part of the needle valve is seated on a valve seat part of the fuel injection hole and from a state where the fuel injection hole is closed, and the tip part of the needle valve is separated from the valve seat, so that a fuel flow path of the DME fuel from an inside of the nozzle body to the fuel injection hole is constructed, and

the fuel flow path with a flow path area to enable an engine output characteristic comparable to the light oil fuel with respect to a lift amount of the needle valve to be obtained by the DME fuel is constructed.

2. A fuel injection nozzle for DME fuel according to claim 1, characterized in that the tip part of the needle valve has a shape that a ratio of a center diameter L3 for regulating a minimum flow path area and a seat diameter L2 of a seat part seated on the valve seat part is L3/L2 = 0.70 or higher.

3. A fuel injection nozzle for DME fuel according to claim 2,

characterized in that the tip part of the needle valve has the shape that a ratio of a shaft diameter L1 of the needle valve and the seat diameter L2 is L2/L1 = 0.85 or higher.

4. A fuel injection nozzle for DME fuel according to claim 3, characterized in that the fuel injection hole has a shape that the total injection hole area is 0.6 mm^2 or larger.

5. A diesel engine comprising a fuel injection nozzle for DME fuel according to claim 3 or 4.